TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 580-8707-1

Job Description: Alaskan Copper

For:
Clean Harbors Environmental Services Inc
19320 Des Moines Memorial Dr
Bldg D, Suite 400
Seatac, WA 98148

Attention: Jason Sullivan

Heather Curbow
Project Manager I
heather.curbow@testamericainc.com
01/18/2008

cc: Scott St.John

TestAmerica Tacoma is a part of TestAmerica Laboratories, Inc.

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan and meet all requirements of NELAC. All data have been found to be compliant with laboratory protocol, with the exception of any items noted in the case narrative.

TestAmerica Laboratories, Inc.
TestAmerica Tacoma 5755 8th Street East, Tacoma, WA 98424
Tel (253) 922-2310 Fax (253) 922-5047 www.testamericainc.com

ACCREDITED IN ACCORDANCE WITH nelac

METHOD SUMMARY

Client: Clean Harbors Environmental Services Inc | Job Number: 580-8707-1

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Inductively Coupled Plasma - Atomic Emission Spectrometry	TAL TAC	SW846 6010B	
Toxicity Characteristic Leaching Procedure	TAL TAC		SW846 1311
Acid Digestion of Aqueous Samples and Extracts for	TAL TAC		SW846 3010A
Mercury in Liquid Waste (Manual Cold Vapor Technique)	TAL TAC	SW846 7470A	
Toxicity Characteristic Leaching Procedure	TAL TAC		SW846 1311
Mercury in Liquid Waste (Manual Cold Vapor	TAL TAC		SW846 7470A

Lab References:

TAL TAC = TestAmerica Tacoma

Method References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

SAMPLE SUMMARY

Client: Clean Harbors Environmental Services Inc

Job Number: 580-8707-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
580-8707-1	Alaskan Copper 2	Solid	01/15/2008 1000	01/16/2008 1209

Client: Clean Harbors Environmental Services Inc

Job Number: 580-8707-1

Client Sample ID: Alaskan Copper 2

Lab Sample ID: 580-8707-1
Client Matrix: Solid

Date Sampled: 01/15/2008 1000
Date Received: 01/16/2008 1209

6010B Inductively Coupled Plasma - Atomic Emission Spectrometry-TCLP

Method:	6010B	Analysis Batch: 580-27479		Instrument ID:	SEA027
Preparation:	3010A	Prep Batch: 580-27456		Lab File ID:	N/A
Dilution:	1.0	Leachate Batch: 580-27427		Initial Weight/Volume:	50 mL
Date Analyzed:	01/17/2008 1343			Final Weight/Volume:	50 mL
Date Prepared:	01/17/2008 1038				
Date Leached:	01/16/2008 1127				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	RL
Silver		ND		0.020
Arsenic		ND		0.060
Barium		ND		0.010
Cadmium		ND		0.010
Chromium		5.8		0.025
Lead		ND		0.030
Selenium		ND		0.10

7470A Mercury in Liquid Waste (Manual Cold Vapor Technique)-TCLP

Method:	7470A	Analysis Batch: 580-27472		Instrument ID:	SEA029
Preparation:	7470A	Prep Batch: 580-27457		Lab File ID:	N/A
Dilution:	1.0	Leachate Batch: 580-27427		Initial Weight/Volume:	5 mL
Date Analyzed:	01/17/2008 1219			Final Weight/Volume:	50 mL
Date Prepared:	01/17/2008 1045				
Date Leached:	01/16/2008 1127				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	RL
Mercury		ND		0.0020

Client: Clean Harbors Environmental Services Inc

Job Number: 580-8707-1

Method Blank - Batch: 580-27456

Method: 6010B
Preparation: 3010A

Lab Sample ID: MB 580-27456/6-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/17/2008 1336
Date Prepared: 01/17/2008 1038

Analysis Batch: 580-27479
Prep Batch: 580-27456
Units: mg/L

Instrument ID: SEA027
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Silver	ND		0.020
Arsenic	ND		0.060
Barium	0.010		0.010
Cadmium	ND		0.010
Chromium	ND		0.025
Lead	ND		0.030
Selenium	ND		0.10

Lab Control Spike/
Lab Control Spike Duplicate Recovery Report - Batch: 580-27456

Method: 6010B
Preparation: 3010A

LCS Lab Sample ID: LCS 580-27456/7-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/17/2008 1359
Date Prepared: 01/17/2008 1038

Analysis Batch: 580-27479
Prep Batch: 580-27456
Units: mg/L

Instrument ID: SEA027
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 580-27456/8-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/17/2008 1402
Date Prepared: 01/17/2008 1038

Analysis Batch: 580-27479
Prep Batch: 580-27456
Units: mg/L

Instrument ID: SEA027
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Silver	101	102	80 - 120	1	20		
Arsenic	102	104	80 - 120	2	20		
Barium	106	107	80 - 120	1	20		
Cadmium	108	109	80 - 120	1	20		
Chromium	103	105	80 - 120	1	20		
Lead	107	109	80 - 120	1	20		
Selenium	103	106	80 - 120	3	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Clean Harbors Environmental Services Inc

Job Number: 580-8707-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 580-27456

Method: 6010B
Preparation: 3010A
TCLP

MS Lab Sample ID:	580-8707-1	Analysis Batch:	580-27479	Instrument ID:	SEA027
Client Matrix:	Solid	Prep Batch:	580-27456	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	01/17/2008 1350			Final Weight/Volume:	50 mL
Date Prepared:	01/17/2008 1038				

MSD Lab Sample ID:	580-8707-1	Analysis Batch:	580-27479	Instrument ID:	SEA027
Client Matrix:	Solid	Prep Batch:	580-27456	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	01/17/2008 1353			Final Weight/Volume:	50 mL
Date Prepared:	01/17/2008 1038				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Silver	103	101	50 - 150	1	20		
Arsenic	104	105	50 - 150	1	20		
Barium	102	103	50 - 150	1	20		
Cadmium	107	105	50 - 150	1	20		
Chromium	105	103	50 - 150	1	20		
Lead	101	103	50 - 150	2	20		
Selenium	111	115	50 - 150	3	20		

Duplicate - Batch: 580-27456

Method: 6010B
Preparation: 3010A
TCLP

Lab Sample ID:	580-8707-1	Analysis Batch:	580-27479	Instrument ID:	SEA027
Client Matrix:	Solid	Prep Batch:	580-27456	Lab File ID:	N/A
Dilution:	1.0	Units:	mg/L	Initial Weight/Volume:	50 mL
Date Analyzed:	01/17/2008 1346			Final Weight/Volume:	50 mL
Date Prepared:	01/17/2008 1038				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Silver	ND	0.00195	19	20	
Arsenic	ND	0.0126	20	20	
Barium	ND	0.00399	43	20	
Cadmium	ND	0.00173	2	20	
Chromium	5.8	5.79	0	20	
Lead	ND	0.00471	14	20	
Selenium	ND	0.0265	NC	20	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Clean Harbors Environmental Services Inc

Job Number: 580-8707-1

Method Blank - Batch: 580-27457

Method: 7470A
Preparation: 7470A

Lab Sample ID: MB 580-27457/6-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/17/2008 1202
Date Prepared: 01/17/2008 1045

Analysis Batch: 580-27472
Prep Batch: 580-27457
Units: mg/L

Instrument ID: SEA029
Lab File ID: N/A
Initial Weight/Volume: 5 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Mercury	ND		0.0020

Lab Control Spike/
Lab Control Spike Duplicate Recovery Report - Batch: 580-27457

Method: 7470A
Preparation: 7470A

LCS Lab Sample ID: LCS 580-27457/7-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/17/2008 1206
Date Prepared: 01/17/2008 1045

Analysis Batch: 580-27472
Prep Batch: 580-27457
Units: mg/L

Instrument ID: SEA029
Lab File ID: N/A
Initial Weight/Volume: 5 mL
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 580-27457/8-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/17/2008 1211
Date Prepared: 01/17/2008 1045

Analysis Batch: 580-27472
Prep Batch: 580-27457
Units: mg/L

Instrument ID: SEA029
Lab File ID: N/A
Initial Weight/Volume: 5 mL
Final Weight/Volume: 50 mL

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Mercury	98	100	75 - 125	2	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Clean Harbors Environmental Services Inc

Job Number: 580-8707-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 580-27457

Method: 7470A
Preparation: 7470A
TCLP

MS Lab Sample ID: 580-8707-1
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 01/17/2008 1228
Date Prepared: 01/17/2008 1045

Analysis Batch: 580-27472
Prep Batch: 580-27457

Instrument ID: SEA029
Lab File ID: N/A
Initial Weight/Volume: 5 mL
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 580-8707-1
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 01/17/2008 1233
Date Prepared: 01/17/2008 1045

Analysis Batch: 580-27472
Prep Batch: 580-27457

Instrument ID: SEA029
Lab File ID: N/A
Initial Weight/Volume: 5 mL
Final Weight/Volume: 50 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Mercury	99	100	50 - 150	2	35		

Duplicate - Batch: 580-27457

Method: 7470A
Preparation: 7470A
TCLP

Lab Sample ID: 580-8707-1
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 01/17/2008 1224
Date Prepared: 01/17/2008 1045

Analysis Batch: 580-27472
Prep Batch: 580-27457
Units: mg/L

Instrument ID: SEA029
Lab File ID: N/A
Initial Weight/Volume: 5 mL
Final Weight/Volume: 50 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Mercury	ND	-0.000540	NC	35	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Chain of Custody Record

8787

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☐

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TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
Clean Harbors	Susan Sullivan	1-16-8	052018
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page _____ of _____**
19320 Des Moines Mem Dr.	206-931-5374		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
Seatac / WA / 98148			
Project Name and Location (State)	**Carrier/Waybill Number**		
Alaskan Copper WA			
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	TCLP RCRA 8	Analysis (Attach list if more space is needed)	Special Instructions/ Conditions of Receipt
Alaskan Copper 2	1-15-8	10AM											√		

Page 9 of 10

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☒ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	1-16-8	12:09	1. Received By	1/16/08	1209
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

AKC-0019590

Login Sample Receipt Check List

Client: Clean Harbors Environmental Services Inc

Job Number: 580-8707-1

Login Number: 8707
Creator: Presley, Kim
List Number: 1

List Source: TestAmerica Tacoma

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	
Cooler Temperature is acceptable.	N/A	
Cooler Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	